Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

tained. Condensation products of Chloral with the three nitranilines, p-bromaniline, o-toluidine, anthranilic acid, and o-anisidine were prepared. By-products, as yet unidentified, were obtained with o-toluidine and with anthranilic acid. The condensation products are readily broken down by hydrochloric acid and by acetic anhydride. When suspended or dissolved in the glacial acetic acid they react with extreme smoothness with bromine, forming beautifully crystalline compounds which are much more stable than the condensation products.

Chapel Hill Ferns: W. C. Coker, of the University of North Carolina.

A collection of the living ferns and fern allies native to Chapel Hill, N. C., was made and exhibited in pots. Twenty species were represented, including all the known Pteridophytes of the neighborhood, except *Botrychium ternatum* and its variety, *dissectum,* which had not yet appeared above ground.

Notes on Turtles of Genus Pseudemys: C. S. Brimley, of Raleigh, N. C.

This paper discusses the character of the turtles of this genus and shows that the distinctive characters attributed to *P. hieroglyphica, P. Labyrinthica, P. mobilensis* and *P. Concinna* all fall within the limits of individual variation of the last named form. These conclusions are drawn from an examination of all specimens of the genus that have passed through the author's hands for the last five or six years.

Electricity in Heavy Traction (illustrated by lantern slides): J. E. Latta, of the University of North Carolina.

The Design of High Masonry Dams: William Cain.

The claim is made that in addition to the three universally imposed conditions, no tension, safe unit pressures and no possible sliding at any horizontal joint, a fourth condition must be imposed, *viz.,* that the factors of safety against overturning and sliding shall increase gradually from the base upward, to allow for the proportionately greater influence, on the upper joints of the wind and wave action, floating ice or other bodies, and especially of the great forces caused by the expansion of thick ice under an increase of temperature, and by earthquakes.

It was found that this could easily be done by taking the well-known theoretical triangular type of cross-section of dam and making some additions at the top sufficient for a roadway.

A preliminary design is given for a dam 258 feet high, with factors of safety and unit pressures marked on the drawing, satisfying all four conditions, the area of cross-section and height being the same as for the celebrated Quaker Bridge design. A comparison was instituted unfavorable to the latter, in that its factors of safety are too small, particularly in the upper portions, where by the proposed fourth condition they should be largest.

This criticism owes its significance to the fact that the new Croton Dam, of New York, 224 feet high to water surface and finished February 1, 1906, at a cost of over $7,500,000 has a profile for 224 feet in depth, exactly the same as the quaker bridge design for the same depth.

The Optical Rotation of Volatile Oil: C. H. Herty and G. A. Johnson, of the University of North Carolina.

Children's Home Society Methods: Wm. B. Streeter, of Greensboro.

Gametophytes of Botrychium Virginianum: Raymond Binford, of the University of North Carolina.

They were found in moist oak woods under the leaves. Some were almost on the surface of the soil, while others were imbedded one to two inches in the soil. They seem to have gotten down by means of worm holes or cracks made by roots of trees. Sizes ranging from 2 mm. to 10 mm. were shown. Specimens of these plants were exhibited before the academy.

F. L. Stevens,
Secretary

DISCUSSION AND CORRESPONDENCE

SEEING THE LIGHTNING STRIKE

On July 14, 1907, at about 5:30 P.M., for the first time in my life, I saw the lightning

strike. I was at a window in the university building, looking westward toward a valley, at the center of which, about a quarter of a mile away, there was a field with a few isolated trees. A thunderstorm coming up slowly from the southwest gave me hopes of seeing the lightning strike. I saw it strike one of these trees. The flash appeared to me as a superb column or shaft of light, about four or five hundred feet high, and about eight or twelve inches in diameter, perfectly straight, vertical and steady. The shaft was white, the base, however, was distinctly red, like the fire of a conflagration, and tinged probably with a little orange. This column of light seemed to stand between the two diverging stems of the tree. It lasted for about two seconds. The thunder was loud, but not the loudest I have ever heard. A light rain was falling at the time.

The effects of the flash seemed to be none whatever. The tree was not shattered and was not set on fire. Some cows grazing about a hundred feet away paid no attention to the discharge, except one which walked toward the tree, as if interested in something there, and then turned around and continued to graze.

The next morning I examined the spot closely. The tree was a cottonwood and stood in moist ground. It consisted of two trunks, about eight and twelve inches in diameter, diverging from a common base towards the north and south. The southern or smaller one had the bark stripped off its western side, in the shape of a broad ribbon, about two yards long and six inches wide. The east side showed two furrows starting from above the same branch, about ten feet above the ground, and running downward in irregular paths. These furrows seemed to have been plowed by a piece of steel and the bark torn off by violence, because there was no sign of scorching or any change of natural color. There was absolutely no other noticeable effect. I was told that a horse standing near the tree had been thrown over a fence, badly stunned but not otherwise injured.

WILLIAM F. RIGGE
CREIGHTON UNIVERSITY

SPECIAL ARTICLES

THE METHOD OF TRIAL AND THE TROPISM HYPOTHESIS

IN his recent book entitled "Behavior of the Lower Organisms" Professor Jennings has drawn attention to the existence of an issue between two attitudes assumed by investigators in attempts to interpret the behavior of organisms. His own position is made sufficiently clear. He is frankly hostile to what he conceives to be the essentials of the tropism hypothesis, and is equally devoted to what he has called the "method of trial" as a means of explaining facts for whose interpretation he believes the tropism hypothesis to be entirely inadequate.

My reason for venturing upon the present discussion of the issue thus emphasized lies in the fact that, while I have been much impressed by the admirable plea which Professor Jennings has made for the method of trial, I do not quite see the force of his main contentions, as applied either to the destruction of the tropism hypothesis or to the support of its successor.

The value of any hypothesis may be estimated according as it does or does not (1) accord with the facts, (2) simplify the problem to be solved, (3) suggest a new line of advance. These tests may be applied to the hypotheses that at present concern us. The views of Professor Jennings will be considered first.

Professor Jennings attempts to account for the phenomena of organic behavior on the basis of two principles. According to one, "behavior is based fundamentally on the selection of varied movements." According to the other, "the resolution of one physiological state into another becomes readier and more rapid through repetition." These are the "primary facts for the development of behavior." Given organisms that react to changes in their environment, given a variety of responses to the same conditions, and the material is provided for the development of all types and grades of organic behavior in accordance with the two principles just stated.

This is obviously a strict application to the